

A new study shows an association between low 25-OH vitamin D levels in childhood and increased occurrence of atherosclerosis in adulthood

Suboptimal vitamin D status during childhood may increase cardiovascular risk in adulthood

Many previous studies have shown an association between inadequate vitamin D levels in adulthood and an increased risk for cardiovascular disease. One of the major risk factors for heart disease is atherosclerosis, or thickening and narrowing of the arteries.

In a recent study published in the *Journal of Clinical Endocrinology and Metabolism*, researchers investigated a potential link between childhood vitamin D deficiency and increased artery thickness and atherosclerosis in adulthood.

The study included 2,148 subjects aged 3-18 years from the Cardiovascular Risk in Young Finns Study, which began in 1980. Ultrasound studies of the left carotid artery were conducted in 2007, when the participants were then aged 30-45. Stored serum vitamin D samples taken at the beginning of the study were analyzed for 25-hydroxyvitamin D in 2010.

After adjusting for age, sex, and childhood risk factors, and independent of cardiovascular risk factors such as serum lipids, hypertension, smoking, diet, physical activity, BMI, and socioeconomic status, decreased levels of vitamin D in childhood were associated with a greater carotid artery thickness. Children with 25-OH vitamin D levels in the lowest 25% (<40 nmol/L, or 16 ng/ml) had significantly increased odds of having high-risk (top 10%) carotid artery plaque as adults.

The results could possibly be explained by the fact that the biologically active form of vitamin D, calcitriol, plays a role in vascular proliferation and growth while inhibiting calcification. The authors also suggest that since vitamin D is important for a healthy immune system, it may help reduce infections early in life that could contribute to cardiovascular disease risk.

These findings suggest that insufficient vitamin D levels during childhood should be considered a possible risk factor for adult cardiovascular disease, and add support to the recommendation to supplement vitamin D during childhood.

Juonala M et al. Childhood 25-OH Vitamin D Levels and Carotid Intima-Media Thickness in Adulthood: The Cardiovascular Risk in Young Finns Study. *J Clin Endocrinol Metab*. 2015 Feb 10;jc20143944.